

A reconstruction of the system of verb aspects in proto-Berbero-Semitic*

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Several verbal forms reconstructed for proto-Semitic strongly resemble reconstructed forms in proto-Berber: compare Semitic $yV\text{-}PaRRaS$ to Berber $y\text{-}\check{a}RR\check{a}S$, Semitic $yV\text{-}PRaS$ to Berber $y\text{-}\check{a}FR\check{a}S$, and Semitic $yV\text{-}PRuS$ and $yV\text{-}PRiS$ to Berber $y\text{-}\check{a}FR\check{a}S$. We suggest that these forms are historically related and sketch a line of development from the reconstructed meanings to their attested uses. $yVPaRRaS$, originally imperfective, retains that value in both Berber and Semitic. $yVPRaS$, originally stative, gained a perfective meaning in Berber and Semitic; the stative meaning is retained in Berber, but was largely lost in Semitic. $yVPRuS/yVPRiS$, originally perfective, retained that meaning in Semitic, merging with the newly perfective $yVPRaS$ forms; in Berber, $yVPRaS$ completely replaced perfective $yVPRuS/yVPRiS$, relegating the latter to non-aspectual uses. We conclude by considering the quality of the first vowel; the alternation seen in Berber $y\text{-}\check{a}FR\check{a}S$ and $y\text{-}\check{a}FR\check{a}S$ supports reconstructions as $yIPRaS$ and $yaPRuS/yaPRiS$, conforming to the Barth–Ginsberg Law of Semitic.

1. Introduction

Semitic and Berber are both branches of the greater Afroasiatic language phylum (see Frajzyngier & Shay 2012 for a recent overview). Even though their relationship is quite distant, with a time depth of at least 6,500 years between living members of the family (Kossmann 2013: 14), there are major points of similarity, especially in the structure of the verbal root and in the ablaut patterns that are used to denote aspect and diathesis. As we will try to show in this article, the system from which Berber and Semitic ablaut patterns are derived may be reconstructible. It is an open question to what extent (traces of) this system can also be found in other Afroasiatic languages; in the frame-

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work of this article, we will take an agnostic stance towards this, and describe the reconstructed system as “proto-Berber-Semitic”, without claiming or denying that it should be reconstructed for Afroasiatic as a whole.

Both Semitic and Berber are characterized by a morphological system in which a large part of the verbs have a root consisting of three consonants (so-called radicals) which are combined with vocalic ablaut patterns (incl. gemination) that provide information about aspect and diathesis. In both families, phonological developments have blurred the system somewhat, especially because of the loss of certain consonants in some contexts. As a result, quite a number of attested verb roots have fewer than three radicals on the surface. For Semitic languages, the underlying, or historical, presence of lost radicals is generally accepted for some verb classes (see Voigt 1988 for an overview of the question). For Berber, recent developments in historical phonology have proven the existence of such consonants in certain verb types (Taine-Cheikh 2004; Kossmann 2001), while Karl-G. Prasse already showed in the 1970s that internal reconstructions using lost consonants are possible, and greatly simplify the reconstructible system (Prasse 1972–1973).

It should be noted, though, that there are also verb classes that have different radical structures, which have their own ablaut patterns, including the derived stems of Semitic and Berber. In this article, we shall restrict ourselves to the comparison of non-derived triradical structures, and leave the comparison and analysis of other structures to a later stage.

Compare the following three non-derived forms in reconstructible Berber and Semitic, each given with a 3SG:M prefix. The forms are given with a dummy root PRS for Semitic and FRS for Berber.¹ Even though the root consonants only serve to clarify the abstract system, one may note that the Semitic root |prs| means ‘to cut off, apportion, sever, decide’ in Akkadian (CAD vol. 12 *sub* parāsu), while the reconstructible Berber root |frs| means ‘to cut (esp. wood)’ (Naït-Zerrad 2002: 638ff. *sub* FRS3).

There exists a dazzling terminological variation when it comes to the naming of these forms in different languages and by different scholars. For Semitic, we will therefore simply refer to the forms according to their abstract structures. For Berber, where scholars make less use of such abstractions, we will also use the English terms given in table 1; for an overview of other terms, see Kossmann (2011: 56) and the discussion in Galand (2010).

¹ The choice of this verb as a grid follows conventions in Akkadian studies; the usage of the possibly cognate verb FRS in Berber can be considered an *homage* to Rössler (1952).

Semitic	Berber	Berber term
yV-PRuS / yV-PRiS	y-ǎFRəS	Aorist
yV-PRaS	y-əFRăS	Perfective
yV-PaRRaS	y-əFăRRăS	Imperfective

Table 1. Semitic and Berber ablaut forms compared

In Berber, only two short vowels can be reconstructed beyond doubt, a low vowel */ă/ and a high vowel */ə/. This is the system still found in Tuareg and in Ghadames; the contrast also surfaces in the more innovative system of Zenaga. In most Berber languages, */ă/ and */ə/ have merged, so the difference between y-ǎFRəS and y-əFRăS was lost; one may note, however, that it is still reflected in verbs with a lost radical. It is possible that the original system of Berber had three short vowels, with a contrast between a high rounded and a high unrounded vowel (Prasse 1972–1973 I: 77; Kossmann 1999: 42–59), but there is only little Berber-internal evidence for this reconstruction.

Given that one reconstructed Berber short high vowel corresponds to two short high vowels in Semitic, the formal match between the three Semitic and the three Berber forms is near perfect. We assume that this is not coincidental, and that these three forms can be reconstructed for proto-Berbero-Semitic.

Both in Semitic and in Berber, a consonantal prefix is followed by a vowel. In Semitic, this vowel is considered to be part of the prefix, and its reconstruction is debated (see section 7 below); hence our rendering yV-PRuS (etc.). In Berber, on the other hand, there is no reason to detach the initial vowel from the ablaut pattern of the stem. With triradical verbs, it is found in virtually all forms, including imperatives and prefix-less forms, e.g. Aorist *ǎfrəs! ‘cut!’, *ǎfrəs-ǎn ‘they cut’; Perfective *əfrăs-ǎn ‘they cut (punctual past), they are cut (state)’; exactly these vowel patterns are still attested in Ghadames. In view of this, we render the Berber forms as y-ǎFRəS (etc.). In the following discussion, this first vowel of the verb will be ignored for the time being, and will only be studied in more detail after a reconstruction of the proto-Berbero-Semitic system will have been obtained.

There are other verbal forms in Semitic and Berber which do not provide such a perfect match. These are the forms that are conjugated with suffixes only in both families, the Stative or Perfect in Semitic, and the conjugation of verbs of permanent state in Berber. For both families, the *communis opinio* is that these are innovative forms. The Semitic Stative/Perfect goes back to verbal adjectives that verbalized when they

became conjugated with pronominal affixes (Huehnergard 1987). A very similar scenario is commonly reconstructed for the stative conjugation in Berber, which is clearly derived from noun-like stems (Galand 1980). It should be noted that the superficial similarity between the two families that both only use suffixes in these forms is not matched by similarities in vowel patterns. If one follows the *communis opinio*, as well as the lack of formal similarity, the forms in Berber and in Semitic can be considered parallel independent innovations within the families (D. Cohen 1984), which are therefore not reconstructible to the proto-Berbero-Semitic stage.

Other verb forms conjugated with prefixes occur in Semitic: the Akkadian *i-PtaRaS* and West-Semitic forms such as *yV-PRVS-a*, *yV-PRVS-an* (etc.), and *yV-PRVS-u* forms. The existence of these tenses in proto-Semitic is debated, and since they lack clear cognates in Berber,² this question falls outside the scope of this article. The possible remnants of *yV-PRVS-u* in Akkadian and its lack of transparency suggest that this form might be reconstructible for proto-Semitic (Voigt 2004). However, the identification of *yVPaRRaS* as a shared Berbero-Semitic Imperfective, which we will arrive at below, makes it unlikely that this putative proto-Semitic *yV-PRVS-u* had imperfective semantics.

In addition, there exists a further, mysterious form in Berber, the Ghadames Future. This is a modal form that, depending on the verb type, is formally similar either to the Aorist or to the Perfective. It also has a special conjugation. Even though the chances are high that at least the conjugation is ancient (Kossmann 2000), the ablaut pattern may have undergone strong analogical influence from the Aorist and the Perfective. Moreover, the original function of this verb form is impossible to assess, as it is now limited to the syntactic context after the modal particle *d* (equivalent to *ad* elsewhere, see below). In view of these uncertainties, we will not dwell upon the Ghadames Future in this article further.

Finally, there are a number of further verbal aspectual ablaut forms in Berber that are probably innovative. Some of these are clearly dialectal innovations (for an overview, see Kossmann 2012: 41–42). On the other hand, two more ablaut stems are clearly reconstructible for proto-Berber, the Negative Perfective and the Negative

² Note however that there are no indications in Berber that allow us to reconstruct short vowels in word-final position. If one assumes that such vowels existed in preceding stages of Berber and were categorically lost, there is of course no way that one could determine whether Berber or its predecessor had forms similar to Semitic *yV-PRVS-a* and *yV-PRVS-u*.

Imperfective. We will not take these into account, following Kossmann (2015) in assuming that they were originally nominal forms.

The reconstruction of the proto-Afroasiatic verb has a long history, and many different proposals have been formulated (for a proposal relatively close to ours, see Diakonoff 1988: 85ff.). As far as we know, except for Rössler (1952), no one-to-one comparison between Semitic and Berber has ever been made. We hope to show that such a comparison is possible, and leads to a simple and elegant reconstruction of the earlier system. As the proposed Afroasiatic reconstructions are often based on different views than the most common reconstructions of Semitic, and are sometimes rather strained when it comes to the Berber data, we prefer not to give a full discussion of these earlier proposals, and work as if the subject were totally new.

2. yV-PaRRaS / y-əFäRRäS

The most obvious formal and functional parallel is found with the yV-PaRRaS/y-əFäRRäS form. In Semitic, this form is attested in Akkadian, Modern South Arabian, and Ethiosemitic. While the vowel between the second and third radical varies between languages and between verbs, *a is probably original here (Kouwenberg 2010: 109–112). The uses of this form in Akkadian have been studied in detail by Streck (1995). It amounts to an archetypical imperfective aspect, used for progressives, habituals, and future events; the same uses occur in Modern South Arabian (Rubin 2010: 123–124, 2014: 142–143) and Classical Ethiopic (Dillmann 1899: 153–155).

In Berber, the y-əFäRRäS form is also used for imperfectives, and the semantic domain of the form is virtually the same as in Akkadian. Only its use for future events is not found in most Berber languages, which rather use a construction with the modal particle *ad*. This particle is probably an innovation that does not predate the proto-Berber stage very much (see below), and in fact there are a couple of vestiges of the usage of the y-əFäRRäS form for marking the future. This is found in all contexts in Zenaga in addition to an auxiliary construction (Taine-Cheikh 2009) and in certain types of subordinated clauses in Middle Atlas varieties (Kossmann 2002: 366).

Thus, there is a perfect match, both in form and in (reconstructed) value, between Semitic yV-PaRRaS and Berber y-əFäRRäS. On the surface, it would seem evident that this form should be reconstructed for proto-Berbero-Semitic, and the idea is, of course, not new (Rössler 1952; Diakonoff 1988). However, both for Semitic and for Berber, it has been argued that the forms are internal innovations. In the case of Semitic, the main arguments are the widely accepted absence of the yV-PaRRaS form in

West-Semitic languages such as Hebrew and Arabic, and its resemblance to a derived stem (called the D-stem in Akkadian studies and Stem II in Arabic studies), which also features gemination of the second radical. Thus, for example, Rundgren (1959) considers the imperfective value a reinterpretation of the original derivational meaning of the D-stem. One argument against reconstructing proto-Semitic yV -PaRRaS lies in the formal differences between the Akkadian and the Ethiosemitic forms (Kouwenberg 2010: 117–125), especially in derived stems and quadriliteral roots. This problem does not occur in Modern South Arabian, whose reconstructible forms are very similar to those found in Akkadian.³ Thus, reflexes of a yV -PaRRaS aspectual form are securely attested in both East- and West-Semitic (Akkadian and Modern South Arabian, respectively).

In Semitic studies, the debate seems to be in a gridlock, with a small majority of researchers tending to reconstruct yV -PaRRaS as a proto-Semitic aspectual form (e.g. Kienast 2001, Lipiński 2001, Huehnergard 2006, Weninger 2011), while others follow Rundgren's lead, including such influential scholars as David Cohen (Knudsen 1984–86).

Within Berber studies, comparing the Imperfective to the Semitic forms is even less accepted, and the *communis opinio* is that it is an ancient derived form that has become integrated into the verbal system at a late stage (Galand 1977, 2010: 204; Chaker 1995: 231).⁴ The main internal linguistic reason for this is that there are two ways of constructing the Imperfective. With many stem and root shapes other than CCC, the gemination does not take place, and instead one finds a prefix *tt-*. There exists little doubt that this prefix is related to, and stems from, a derived form. This is corroborated by the fact that *tt-* is incompatible with the causative derivation, and thus seems to have played a role in derivation (Kossmann 2002). It thus makes sense, in principle, to consider the other means of forming an Imperfective as stemming from a derivation

³ Kouwenberg's main objections against the identification of Classical Ethiopic $y\bar{a}$ -PaRRaS with Akkadian *i*-PaRRaS are: 1) the second stem vowel is invariably *a* in Ethiopic, but variable in Akkadian; and 2) Ethiopic marks the difference between the $y\bar{a}$ -PaRRaS and the $y\bar{a}$ -PRaS of the derived stems with gemination (e.g. A₁-stem *yā-naggār* vs. *yā-ngār*) or by changing the first stem vowel, while Akkadian shows an *a/i* alternation in the second stem vowel (e.g. Š-stem *u-šapras* vs. *u-šapris*). But Modern South Arabian 1) has forms with different vowels in the second stem syllable, cf. Jibbali *yā-kódar* < * yV -qaddur or * yV -qaddir besides *yā-féḳór* < * yV -faqqar (Rubin 2014, *pace* Kouwenberg 2010: 119); and 2) shows the same alternation of the second stem vowel in the derived stems as Akkadian, cf. Mehri H-stem *yā-harkūb* < * yV -harkab or * yV -harakkab vs. *yā-hárkab* < * yV -harkib (Rubin 2010).

⁴ Prasse's opinion about this subject is not entirely clear. On the one hand, he seems to endorse a background in derivation (Prasse 1972–1973: VI: 42–43), on the other hand he states that it was already part of the proto-Afroasiatic inventory (Prasse 2009: 276; with reference to the 1972–1973 passage).

too. If one considers the situation in more detail, this line of argumentation does not look very promising. In the first place, if the putative ancient geminate derivation was anything like its Semitic counterpart, the D-stem, it would have had a strong relationship to transitive expressions (Kouwenberg 1997). The origin of the *tt-* prefix, on the other hand, obviously lies in a valency-decreasing derivation, which is still attested in this form in a number of Berber varieties (Kossmann 2002). Thus the two derivations underlying the Berber Imperfective would have had opposite values. A further argument against a derivational origin of the $\gamma\text{-}\text{ə}\text{F}\check{\text{a}}\text{RR}\check{\text{a}}\text{S}$ form is the absence of residual forms. Unlike in Semitic, there is no such thing as a D-stem in Berber, and, moreover, there are hardly any native verbs that have the basic stem form P-RR-S; those that are found are all evidently secondary formations, e.g. denominal verbs like Ghadames *nəmmar* "to bless" from *tanəmmert* "blessing" (Lanfry 1973: 243). Even if the original derivation was lost, one would expect some lexicalized forms to be retained, and their absence suggests that no such derivation ever existed in Berber.

The main reasons that $\gamma\text{-}\text{ə}\text{F}\check{\text{a}}\text{RR}\check{\text{a}}\text{S}$ is considered a Berber-internal innovation, however, have to do with the specific comparative and historical assumptions that the researchers adhere to. Thus David Cohen adheres to Rundgren's analysis of the Semitic forms as innovations and therefore has no reason to compare them with Berber. The case of the most influential analysis of the history of the Berber system, Galand (1977), is similar. Galand argues that the present situation of a non-aspectual Aorist and an aspectual Perfective (*accompli*) goes back to an earlier opposition where the Aorist expressed the imperfective aspect (*inaccompli*). What is now the Imperfective must therefore be an innovative form that took over the functions of the ancient Imperfective and ousted it into the domain of sequential and modal expressions.

Additionally, there is a typological argument: the fact that the Berber and Semitic Imperfectives are marked by gemination would be indicative of their derived, maybe even expressive, origin (Kouwenberg 1997: 36–37; similarly, it seems, Galand 2010: 203). Whatever one may think of this argument in theory, there is no obvious reason why it should be relevant to proto-Berber or proto-Semitic. Even if the geminated forms represent an ancient expressive formation, the development into an aspectual form may have been in place already before Berber and Semitic split.

Therefore we conclude that, in keeping with the majority view of Semitic and considering the lack of arguments against such an analysis in Berber, $\gamma\text{V-PaRRaS}$ can be reconstructed for proto-Berbero-Semitic in the meaning of an Imperfective.

3. yV-PRVS / y-VFRVS: introduction

The forms with the basic structure yVPRVS are structurally quite different in Semitic and in Berber. In Semitic, the question whether yV-PRuS, yV-PRiS or yV-PRaS is used is largely a lexical choice: most verbs only allow for one form. In Berber, on the other hand, every verb has both a y-ǎFRəS and a y-əFRăS form. Instead of being a lexical choice, the two forms constitute a fully productive opposition.

In order to reach a reconstruction of the system behind these forms, one has to look in detail at the individual systems of the two language families, and attempt to make a family-internal reconstruction of these. While informed by the data from the other family, this reconstruction should not be dependent on them.

In Semitic, all three yV-PRVS forms are used in the same way. In Akkadian, they express perfective events in the past. This perfective meaning has largely been taken over by the suffix conjugation in West-Semitic, but yV-PRVS still occurs in this use in vestigial forms in different West-Semitic languages (Kouwenberg 2010: 129). This meaning is therefore reconstructed for the proto-Semitic yV-PRVS form (Huehnergard 2006). Besides past events, yV-PRVS and derived forms are also used to express various forms of deontic modality, and the imperative is formed from the same stem, PRVS (Suchard forthcoming). Both of these uses may be related to the perfective aspect.

The usage of the Berber y-ǎFRəS and y-əFRăS forms will be discussed in the relevant sections below.

4. yV-PRaS / y-əFRăS

Let us first take a look at the forms with internal /a/: Semitic yV-PRaS and Berber y-əFRăS. In Semitic, the distribution of yV-PRaS is lexically determined. It consistently occurs with verbs that express a change of state in the subject, such as *yV-*bsal* 'it became cooked, it ripened' or *yV-*qrab* 'he came near'. Verbs with yV-PRaS forms are therefore often referred to as the 'stative' or 'intransitive' class in Semitic grammars, but the occurrence of transitive forms like *yV-*lmaḏ* 'he learned' and *yV-*lbaṣ* 'he put on (clothing)' makes 'middle' a better term (M. Cohen 1955).

Unusual semantics occur with forms of two irregular verbs in Akkadian, *iḏû* 'to know' and *išû* 'to have'. Unlike other yV-PRVS forms, these so-called prefixed statives express a present state: thus, *iḏē* (from *yi-ydaṣ or *yi-wdaṣ) means 'he knows', not 'he came to know'; *išû* (from *yi-ysaw or *yi-wsaw) means 'he has', not 'he acquired' (Von Soden 1995: 127). The reconstruction of the stem vowel in these verbs is uncer-

tain, as the **a*-vowel of **yi-y/wdaʕ* may be conditioned by the following pharyngeal, while *īšū* could also go back to **yi-y/wsuw*; semantically, though, these verbs align well with the middle meaning of other yV-PRaS forms, supporting a reconstruction with **a*. It may be that these frequent verbs preserve a stative meaning that was shared by all yV-PRaS forms at a pre-proto-Semitic stage (Kouwenberg 2010: 468).

In Berber, y-əFRāS is used to express a category that will be called Perfective here. The Perfective is used in two basic contexts. The first usage is the expression of a dynamic, punctual, closed event, almost always in the past. This will be called the dynamic use. The second usage is the expression of a state, without any temporal connotations. This will be called the stative use. With verbs whose semantics inherently imply processes, the stative use can be interpreted as a result of an earlier action. On the other hand, Perfectives can also be used for states that are not conceived of (nor conceivable as) results (cf. the overview in Kossmann 2012: 79ff.); thus, a verb like ‘to go round, to surround’ may both refer to somebody walking around an oasis (which would be dynamic), an army encircling an oasis (which would be dynamic or resultative) and to mountains surrounding it (which would be stative; cf. Kossmann 1997: 352). Many Perfective verbs in Berber are patientive ambitransitives, that is, when used dynamically, they are transitive, and the agent is the subject of the construction; when used as states, they are intransitive, and the patient of the transitive construction functions as the subject of the intransitive construction.

The analysis of the Perfective is among the most hotly debated issues in Berber linguistics. In his classic article about the uses and history of the verbal system, Lionel Galand (1977) proposed that the Perfective (*accompli*) is inherently dynamic, and that the stative use can be interpreted as a resultative. Although couched as synchronic, it seems that the analysis is to a large extent historical in nature, as the author concedes that verbs of permanent state are different, because they have a different history. Other writers (e.g. Chaker 1995: 63–82) have taken issue with this analysis and point to the fact that, according to native speakers’ intuitions, the stative uses of the Perfective do not have a resultative connotation. The analysis as a resultative would rather be an analytical tool to reach a unified description of the Perfective than a semantic description of its uses. As these writers do not problematize the existence of other uses that are punctual and dynamic, the picture they draw is essentially one of polysemy: the Perfective has two different usages, whose meanings may be connected, but are not simply sub-parts of a larger, overarching, meaning. Finally, still other researchers take the opposite stance from Galand, and consider stative to be the quintessential

meaning of the Perfective, and the dynamic uses to be either sub-uses of the stative (e.g. Prasse 2009: 237), or historical derivations from it (Mettouchi 2004).

Most of these analyses are put forward as synchronic accounts: on the level of the languages as spoken nowadays, the Perfective is essentially dynamic (Galand) or stative (Prasse), or there is polysemy. It is, however, possible, and often silently intended, that these scenarios be rephrased in a historical way. If one takes the modern situation as largely polysemous, one may assume that one of the two meanings was derived from the other in some sort of historical process. Thus one could venture two hypotheses:

1. The Perfective was originally a punctual dynamic form. In certain contexts, it could be used as a (dynamic) resultative. From this resultative use, a new interpretation evolved, which made the process behind the resultant state less important, while the stative meaning achieved prominence. Possibly enhanced by the verbalization of verbs of permanent state, the ancient resultative evolved into a pure stative without connotations of a preceding process.
2. The Perfective was originally a marker of a state. With verbs that inherently denote a process, this entailed a resultative reading. On the basis of this resultative interpretation, the Perfective acquired a dynamic usage, which denoted the process as such, and no more just the state from which it resulted.

Both hypotheses are plausible, and no doubt attested in other language families. One notes, for instance, that the development of a stative form into a Perfective is paralleled by the West-Semitic Perfect, which stems from an ancient stative form. In order to choose between one or the other scenario, one needs external evidence.

When comparing Semitic and Berber, there are important differences and commonalities. The most important difference is that in Semitic $\gamma V\text{-PRaS}$ is largely a lexical class, while $\gamma\text{-}\acute{\alpha}FR\check{a}S$ is an aspectual stem in Berber. Thus, while most Semitic $\gamma V\text{-PRaS}$ verbs are not opposed to a $\gamma V\text{-PRu/iS}$ verb of the same stem, in Berber the opposition between $\gamma\text{-}\acute{\alpha}FR\check{a}S$ and $\gamma\text{-}\check{\alpha}FR\acute{a}S$ is relevant to all verbs. The main commonality lies in the meaning. Even though middle and stative are not the same, they are semantically close; moreover, the Semitic forms **yi-ydaʿ* and **yi-ysaw* (assuming the reconstruction with *a* is correct) could be interpreted as residual cases of a formerly more common stative meaning of the form. In this connection, it should be noted that in the earlier stages of Semitic (as attested in Akkadian), stative meanings are expressed by

means of a conjugated verbal adjective (the so-called suffix conjugation), which is held to be a Semitic innovation. This brings us to what we consider the most plausible scenario in order to tie together the Semitic and the Berber forms. Originally, yVPRaS was a productive way to express a state; as in Berber, this included states resulting from the action described by dynamic verbs. In Semitic, a new form emerged, based on verbal adjectives, that took the place of the yV-PRaS stative. Particularly common cases of yV-PRaS were retained, but shifted their meaning to become a perfective, e.g. *yV-*Imad* *‘he is learned’ > ‘he learned’, *yV-*qrab* *‘he is near’ > ‘he came near’; cross-linguistically, such a change from a stative to a perfective – by way of an anterior or perfect, i.e. ‘he has learned’, ‘he has come near’ – is very common (Bybee et al. 1994: 63–69, 81–87). This resulted in a lexicalization of yV-PRaS: what used to be a productive opposition became a lexical feature associated with verbs that were particularly prone to a stative/intransitive reading. In Berber, on the other hand, the stative meaning was maintained. y-əFRaS did, however, acquire meanings beyond the stative, as the original resultative meaning associated with states from inherently dynamic verbs was extended to mean a simple perfective without any association to state or result.

5. yV-PRuS & yV-PRiS / y-əFRaS

The third set of forms that concern us here is yV-PRuS, yV-PRiS / y-əFRaS. In Semitic, yV-PRuS and yV-PRiS belong to the same tense as yV-PRaS. The stem vowels -u- and -i- are characteristic of transitive verbs, which only rarely have yV-PRaS forms. Based on the designation of yV-PRaS as a middle form (see above), we may refer to yV-PRuS and yV-PRiS as active. In Akkadian and Classical Arabic, yV-PRiS tends to be associated with verbs that express punctual action, like *yV-*sriq* ‘he stole’ (Aro 1964: 191). In other languages, yV-PRuS has largely replaced original yV-PRiS forms, as in Hebrew and Aramaic, or the two forms have merged phonologically, as in Ethiosemitic.

Intransitive yV-PRuS and yV-PRiS forms also occur. A class of intransitive yV-PRuS verbs is found in all classical Semitic languages; this mainly contains atelic verbs of motion, like *yV-*rqud* ‘he skipped around’, and other verbs expressing atelic activities (Aro 1964).⁵ In Akkadian, there are also adjectival verbs with yV-PRiS forms, like

⁵ In Akkadian, these intransitive yV-PRuS verbs form the i-PaRRaS with -u- in the second syllable of the stem, e.g. *i-rappud* ‘he roams about’ besides *i-rpud* ‘he roamed about’. This is unlike the transitive yV-PRuS verbs, which have -a- here, e.g. *i-parras* ‘he cuts’ besides *i-prus* ‘he cut’. The atelic yV-PRuS verbs may have copied the unchanging stem vowel of other intransitive verbs, e.g. *i-qarrab* ‘he comes near’ besides *i-qrab* ‘he came near’.

i-kbit ‘it became heavy’, while adjectival yV-PRuS occurs in both Akkadian, like *i-tqun* ‘it became certain’ and Arabic, like *ya-kbur* ‘(that) it be(come) great’. These verbs are usually associated with primary adjectives of the PaRiS and PaRuS patterns (Kouwenberg 2010: 60–65). In Akkadian, such adjectives form the Stative of their associated verbs, e.g. *kabit* ‘it is heavy’, *taqun* ‘it is certain’; in West-Semitic, they have developed into Perfects, e.g. Classical Arabic *kabura* ‘it was/became great’. It seems likely that the -i- and -u- vowels in the yV-PRVS form of these verbs were taken over from the adjectives that formed the core of their paradigm. Discounting these adjectival verbs, then, we may conclude that yV-PRiS was originally associated with transitive verbs, especially those with punctual semantics, and yV-PRuS was associated with both transitive verbs in general and atelic intransitive verbs. The main difference with yV-PRaS is that the latter is used with verbs where the subject is greatly affected, while the subjects of yV-PRiS and yV-PRuS verbs are not particularly affected. This distinction between middle yV-PRaS and active yV-PRiS or yV-PRuS is clearest in the cases where a middle verb coexists with an active verb from the same root, e.g. *yV-xrab ‘it fell into ruin’ vs. *yV-xrib ‘he ruined’.

In Berber, y-äFRaS is the vowel scheme of a form commonly called the Aorist (*aoriste*; cf. however Prasse 1972-73, who uses *imparfait*). The Aorist is found in a number of well-defined contexts, and its presence is to a large degree predictable from syntactic context.

In the first place, the Aorist is used with normal imperatives and injunctives. It should be noted, however, that habitual imperatives are formed with the Imperfective. In the second place, it is found after the modal particle *ad*, which marks that the event described in the following verb is not (yet) realized. Again, it is also possible to use the Imperfective after *ad* for habits.⁶ In the third place, it is used in sequential constructions, in which the Aorist signals that a preceding earlier Mood or Aspect is still valid. The details of this construction vary between languages (Galand 1987): in some languages any aspect or mood can be continued by the Aorist (e.g. Tashelhiyt), while others have restrictions.

The Aorist thus has a wide range of only slightly related uses, most of which can be predicted from the syntactic context. This led Galand (1987) to the conclusion that it is best analyzed as a non-aspect, a form which has no inherent aspectual value, but which takes on the aspectual value set by its preceding context. In the case of the

⁶ A complicating factor is that in many varieties *ad* + Aorist can also be used for habits, a usage not without parallel in English “after dinner we would go for a walk”.

sequential use, this preceding context is the earlier verb form; in the case of the non-realized mode, it is the particle *ad* that provides the non-realized meaning. While this analysis is largely accepted by scholars working on North African varieties of Berber, it was strongly criticized by Prasse (e.g. 2009: 259ff.). Whatever one's opinion about the synchronic analysis, it is clear that the system as it stands now is not very ancient. The construction with *ad* is almost certainly an innovation from shortly before the proto-Berber period, *ad* being either an ancient pronominal form (Vycichl 1992) or an ancient conjunction (Prasse 1972-73 III: 238-239) – or both – that developed into a preverbal marker, probably in a similar way to how French developed injunctives of the type *qu'il vienne* 'may he come'.

All authors seem to agree that the current distribution of the Aorist is different from earlier on, and that it has been ousted from its earlier functions by innovative forms. Galand (1977) identifies this function as an ancient imperfective (*inaccompli*). In his view, the modern Perfective would have been more or less similar in usage to what is found today, while the $\gamma\text{-}\text{əF}\text{əRR}\text{əS}$ form would be an innovation. Once this innovation had happened, the Aorist lost most of its functions, and was left merely as a non-aspect or, if one wants, became a modal rather than an aspectual marker.

As argued above, we reconstruct $\gamma\text{-}\text{əF}\text{əRR}\text{əS}$ for proto-Berbero-Semitic, and consider $\gamma\text{-}\text{əFR}\text{əS}$ to be an ancient stative form that only later expanded to express punctual events. From this point of view, the natural locus for the Aorist would not be the Imperfective (which is already accounted for), but the Perfective. Modal usages, such as imperatives would be part of the Perfective meaning, which fits in well with the fact that orders typically demand a complete action and exhibit little temporal structure.

The reconstruction of the Berber Aorist $\gamma\text{-}\text{əFR}\text{əS}$ as a perfective form, which included modal uses such as the imperative, conforms well with the situation in Semitic. As we saw, in proto-Semitic, $\gamma\text{V-PRu/iS}$ can be reconstructed as a dynamic perfective; moreover, imperatives are formed with PRVS forms.⁷

6. Conclusion

This brings us to a reconstruction of the aspectual system of proto-Berbero-Semitic. We propose that the system was built upon two axes. The first axis is DYNAMIC versus

⁷ As there is no aspectual difference between the different $\gamma\text{V-PRVS}$ forms, this is of course also true for /a/-forms, even though in usage imperatives from middle verbs are less common than imperatives from active verbs.

STATIVE. The second axis is PERFECTIVE versus IMPERFECTIVE. States are essentially outside the PERFECTIVE/IMPERFECTIVE opposition, and share characteristics of both: their unboundedness makes them similar to imperfectives, while the lack of internal temporal structure makes them similar to perfectives. Therefore, in a system with a dedicated stative form, one expects that the PERFECTIVE/IMPERFECTIVE opposition is only relevant to the DYNAMIC axis.

Hence, we propose the following tripartite system:⁸

	DYNAMIC	STATIVE
PERFECTIVE	yVPRuS / yVPRiS	yVPRaS
IMPERFECTIVE	yVPaRRaS	

Table 2: The proto-Berbero-Semitic verb system

In the two families, this system evolved in different manners. In Semitic, the opposition between dynamic and stative was lexicalized, no doubt as a result of the introduction of a new stative formation on the basis of conjugated verbal adjectives:

	DYNAMIC	STATIVE
PERFECTIVE	yV-PRuS / yV-PRiS / yV-PRaS ←	PaRVS-a
IMPERFECTIVE	yV-PaRRaS	

Table 3: The proto-Semitic verb system

In Berber, on the other hand, the old stative acquired new functions as a marker of punctual events, and thereby jostled the old Perfective into modal and sequential uses.

	DYNAMIC	STATIVE
PERFECTIVE	y-əFRăS ←	y-əFRăS
IMPERFECTIVE	y-əFăRRăS	
non-aspectual	y-ăFRəS ←	

Table 4: The proto-Berber verb system

⁸ Note the overall similarity to the system proposed for Proto-Semitic by Diakonoff (1988: 89).

All in all, this analysis demands surprisingly few changes between proto-Berbero-Semitic and the reconstructible (and to a large extent still extant) systems of the individual families.

7. A note on the prefix vowel

So far, we have ignored the issue of the proto-Semitic prefix vowel, simply giving the prefixes as $yV-$. The reconstruction of this vowel is controversial. Several different systems are attested (see table below). In Akkadian, the prefix vowel varies per person, with a occurring in the first person singular prefix $a-$ (Old Akkadian $\text{ʔ}a-$) and the second person prefix $ta-$, but i occurring in the first person plural prefix $ni-$ and the third person prefix $i-$ (Old Akkadian $yi-$). In Northwest-Semitic, one and the same prefix vowel is used for every person, but different verbs take different prefix vowels: $*a$ occurs before $-PRiS$ and $-PRuS$ and $*i$ before $-PRaS$ ($-PaRRaS$ not occurring in Northwest-Semitic). This distribution is commonly known as the Barth–Ginsberg Law, after its discoverers (Barth 1894: 4–6, Ginsberg 1932–1933: 382–383, 1939: 318). The Barth–Ginsberg Law also operates in some colloquial dialects of Arabic (e.g. Najdi, Ingham 1994), but Classical Arabic has a as the prefix vowel in nearly all cases; Classical Ethiopic, on the other hand, has ə everywhere, which must come from $*i$ or $*u$. Given the alternations seen in both the Akkadian and the Northwest-Semitic prefixes, this homogeneity probably results from one prefix vowel being leveled.⁹

	1SG	1PL	2, 3F	3M
Akkadian	$a-$	$ni-$	$ta-$ (3F $i-$)	$i-$
NWS fore $-PRaS$	$*\text{ʔ}i-$	$*ni-$	$*ti-$	$*yi-$
NWS elsewhere	$*\text{ʔ}a-$	$*na-$	$*ta-$	$*ya-$
Classical Arabic	$\text{ʔ}a-$	$na-$	$ta-$ (3F:PL $ya-$)	$ya-$
Classical Ethiopic	$\text{ʔ}\text{ə}-$	$n\text{ə}-$	$t\text{ə}-$ (3F:PL $y\text{ə}-$)	$y\text{ə}-$

Table 5. The Semitic subject prefixes

Which of these distributions, if either, should be reconstructed for proto-Semitic? Barth believed the stem-based alternation to be original; more recently, this view has been defended by Testen (1992, 1994, 2000), who invokes possible traces of the Barth–

⁹ The presence of i in the Biblical Hebrew reflex of $yV-PRuS$, $yiPRoS$, is also often attributed to leveling, but it is more probably due to sound change (Suchard 2016).

Ginsberg Law in Akkadian. Others prefer to project the Akkadian prefixes back to proto-Semitic and see the Barth–Ginsberg Law as a later innovation (Hetzron 1976, Hasselbach 2004, Huehnergard 2005). As both accounts have their advantages and difficulties, the issue has reached something of a stalemate.

If the proposed connection between proto-Semitic $yV\text{-}PRaS$ / proto-Berber $y\text{-}\mathfrak{a}FR\mathfrak{a}S$ and proto-Semitic $yV\text{-}PRuS$, $yV\text{-}PRiS$ / proto-Berber $y\text{-}\mathfrak{a}FR\mathfrak{a}S$ is accepted, this provides external evidence that can resolve this question. As proto-Berber $*\mathfrak{a}$ corresponds to proto-Semitic $*i$ or $*u$ and proto-Berber $*\mathfrak{a}$ corresponds to proto-Semitic $*a$, we may reconstruct the proto-Berbero-Semitic Perfective as $yaPRuS$ and $yaPRiS$ and the proto-Berbero-Semitic Stative as $yiPRaS$. This suggests that, in some prefixes at least, the Barth–Ginsberg Law was already present in proto-Berbero-Semitic, and, by extension, in proto-Semitic.

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